

**Amendments to the Claims:**

1. (currently amended) A data slicer comprising:
  - a comparator coupled with an input signal and a reference signal for generating a sliced signal;
  - 5 a waveform generator for generating a calibration signal;
  - a pulse extension device coupled to the comparator and the waveform generator for modifying the duty cycle of either the sliced signal or the calibration signal to output;
  - 10 a charge pump coupled between the pulse extension device and a first node for charging and discharging the first node according to a signal output from the pulse extension device;
  - a determining circuit for adjusting the data slicer according to the level change at the first node; ~~and~~
  - 15 a feedback device coupled between the first node and the comparator for generating the reference signal; ~~and~~  
a multiplexer coupled with the comparator, the waveform generator, and the pulse extension device for selectively outputting the sliced signal or the calibration signal to the pulse extension device.
- 20 2. (canceled)
3. (currently amended) The data slicer of claim 1 ~~claim 2~~ further comprising:
  - an integrator coupled with the first node; and
  - an analog-to-digital converter (ADC) coupled between the integrator and the determining circuit.
- 25 4. (original) The data slicer of claim 3 wherein when the multiplexer outputs the calibration signal to the pulse extension device, the determining circuit compares the

output values of the ADC at two different time instants  $N_1 \cdot T_C$  and  $N_2 \cdot T_C$  to determine how to adjust the data slicer, where  $T_C$  represents the period of the calibration signal and  $N_1$  and  $N_2$  are integers.

- 5    5. (currently amended) The data slicer of claim 3 wherein the pulse extension device is for receiving the sliced signal or the calibration signal and modifying the duty cycle of the received signal at the pulse extension device ~~their duty cycles~~ in order to generate a first modifying signal and a second modifying signal.
- 10    6. (currently amended) The data slicer of claim 5 wherein the pulse extension device comprises:
  - a pulse extender coupled with the multiplexer for receiving the sliced signal or the calibration signal and modifying the duty cycle of the received signal at the pulse extender ~~their duty cycles~~ in order to generate the first modifying signal;
  - 15        and
  - an inverter coupled with the pulse extender for generating the second modifying signal inverse to the first modifying signal.
- 20    7. (original) The data slicer of claim 6 wherein the determining circuit is coupled to the pulse extender for adjusting the pulse extender.
- 25    8. (currently amended) The data slicer of claim 5 wherein the pulse extension device comprises:
  - a first pulse extender coupled with the multiplexer for receiving the sliced signal or the calibration signal and modifying the duty cycle of the received signal at the first pulse extender ~~their duty cycles~~ in order to generate the first modifying signal;
  - an inverter coupled with the multiplexer for receiving the sliced signal or the

calibration signal and outputting them after inversion; and

a second pulse extender coupled with the inverter for receiving the inverted version of the sliced signal or the calibration signal and modifying the duty cycle of the received signal at the second pulse extender ~~their duty cycles~~ in order to generate the second modifying signal.

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9. (original) The data slicer of claim 8 wherein the determining circuit is coupled to the first pulse extender for adjusting the first pulse extender.

10 10. (original) The data slicer of claim 8 wherein the determining circuit is coupled with the second pulse extender for adjusting the second pulse extender.

11. (original) The data slicer of claim 5 wherein the charge pump is a tunable charge pump.

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12. (original) The data slicer of claim 5 wherein the charge pump comprises:

a first tunable charge pump unit coupled between the pulse extension device and the first node for charging the first node according to the first modifying signal; and

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a second tunable charge pump unit coupled between the pulse extension device and the first node for discharging the first node according to the second modifying signal.

13. (original) The data slicer of claim 12 wherein the first tunable charge pump unit

25 comprises:

a tunable current source; and

a first switch coupled between the tunable current source and the first node for charging the first node according to the first modifying signal.

14. (original) The data slicer of claim 13 wherein the determining circuit is coupled with the tunable current source for adjusting the tunable current source.

5 15. (original) The data slicer of claim 12 wherein the second tunable charge pump unit comprises:

a tunable current sink; and  
a second switch coupled between the tunable current sink and the first node for discharging the first node according to the second modifying signal.

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16. (original) The data slicer of claim 15 wherein the determining circuit is coupled with the tunable current sink for adjusting the tunable current sink.

17. (currently amended) The data slicer of claim 3 wherein the pulse extension device is 15 for receiving the sliced signal or the calibration signal to modify the duty cycle of the received signal at the pulse extension device ~~its duty cycle~~ in order to generate a first modifying signal.

18. (currently amended) The data slicer of claim 17 wherein the pulse extension device 20 comprises:

a pulse extender coupled with the multiplexer for receiving the sliced signal or the calibration signal to modify the duty cycle of the received signal at the pulse extender ~~its duty cycle~~ in order to generate the first modifying signal.

25 19. (original) The data slicer of claim 18 wherein the determining circuit is coupled to the pulse extender for adjusting the pulse extender.

20. (original) The data slicer of claim 17 wherein the charge pump is a tunable charge

pump.

21. (original) The data slicer of claim 17 wherein the charge pump comprises:

- a first tunable charge pump unit coupled between the pulse extension device and  
5 the first node for charging the first node according to the first modifying signal; and
- a second tunable charge pump unit coupled between the pulse extension device and the first node for discharging the first node according to the first modifying signal.

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22. (original) The data slicer of claim 21 wherein the first tunable charge pump unit comprises:

- a tunable current source; and
- 15 a first switch coupled between the tunable current source and the first node for charging the first node according to the first modifying signal.

23. (original) The data slicer of claim 22 wherein the determining circuit is coupled with the tunable current source for adjusting the tunable current source.

20 24. (original) The data slicer of claim 21 wherein the second tunable charge pump unit comprises:

- a tunable current sink; and
- a second switch coupled between the tunable current sink and the first node for  
25 discharging the first node according to the first modifying signal.

25. (original) The data slicer of claim 24 wherein the determining circuit is coupled with the tunable current sink for adjusting the tunable current sink.

Appl. No. 10/708,616  
Amdt. dated September 27, 2007  
Reply to Office action of June 28, 2007

26. (original) The data slicer of claim 1 wherein the feedback device is a low pass filter.